

Math 115, Quiz 1

Name:

Date: Wednesday September 11

Duration: 20 min.

PROBLEM 1:

Consider the function $f(x, y) = \sqrt{4 - x^2 - y^2}$.

1. Find and sketch the domain of f .
2. Determine if the domain is open, closed, bounded or unbounded.
3. Give an equation for the level curves of f and sketch two of them on the same picture.

PROBLEM 2:

Find the limit or explain why it does not exist: $\lim_{(x,y) \rightarrow (0,0)} \frac{2xy}{x^2 + y^2}$.

PROBLEM 3:

Find $\frac{\partial f}{\partial y}(x, y)$ of $f(x, y) = x \sin x - e^{y^2 x}$.